

UNUSUALLY DRY 'LOW' OF MARCH 28 AND 29, 1928

By L. T. SAMUELS

On March 28 a deep depression covered the Southwestern States with one center (29.40 inches) over Santa Fe and Pueblo and another (29.28 inches) over Wichita. During the ensuing 24 hours this Low crossed Texas and became centered (29.54 inches) over northeastern Arkansas with a steep pressure gradient producing strong southerly winds over the Gulf States and those adjoining on the north. During this 24-hour period practically no precipitation occurred in any of the States traversed by this disturbance.

This fact is unusual in that, ordinarily, southerly winds blowing off the Gulf of Mexico obviously carry an abundance of moisture, which results in more or less precipitation over these regions. It is especially significant, therefore, to find from kite and airplane records obtained at this time that marked temperature inversions accompanied by extremely low relative humidity, prevailed above elevations of 1,000 meters. There follows a tabulation of the kite records from Groesbeck, Tex., and Broken Arrow, Okla., from which it will be observed that extremely dry and warm air characterized the upper levels of the depression during this period. Such lapse rates are decidedly abnormal in low-pressure areas.¹ The records further revealed a thin layer of stratus clouds at the base of the inversion level. The deepening of these clouds was prevented, however, by the existence of the inversion.

MARCH 28, 1928

GROESBECK, TEX.

Time	Elev. (m.) M. S. L.	Temp. ° C.	t/100 m.	Rel. hum.	Wind dir.	Vel. (m. p. s.)
7:12 a.	141	15.6		86	SSW.	8.9
21	679	10.8	0.89	100	S.	24.2
27	921	19.8	-3.10	28	SSW.	22.2

BROKEN ARROW, OKLA.

11:08 a.	1233	22.7		34	SSW.	9.8
19	753	17.7	0.96	38	SSW.	14.6
21	1,018	20.0	-0.87	13	SW.	16.1
45	2,213	12.3	0.64	3	WSW.	23.0
12:15 p.	2,774	9.3	0.53	9	SW.	22.8
27	3,039	8.0	0.54	4	SW.	27.6

MARCH 29, 1928

GROESBECK, TEX.

9:05 a.	141	13.0		53	NNW.	8.5
15	710	8.6	0.77	61	NNW.	8.4
27	854	11.8	-2.22	100	WNW.	6.3
38	1,145	13.0	-0.41	100	WNW.	6.4
53	1,276	11.4	1.22	97	W.	10.9
57	1,661	14.4	-0.78	24	W.	11.6
10:28	2,357	10.5	0.56	7	W.	11.3
32	2,534	10.8	-0.17	6	W.	14.7
40	2,833	8.9	0.54	5	WSW.	16.6

BROKEN ARROW, OKLA.

10:24 a.	233	5.0		65	N.	11.6
34	568	0.8	1.25	35	NNW.	13.3
40	899	-1.9	0.82	100	NNW.	12.8
11:05	1,347	-4.0	0.47	92	N.	
36	1,655	5.8	-3.18	53	NNW.	10.2
46	1,951	3.5	0.78	49	NW.	11.2
53	2,303	3.8	-0.09	20	WNW.	16.2
59	2,828	0.7	0.59	19	WNW.	17.7
12:15 p.	3,594	-5.1	0.66	22	WSW.	33.2

Surface.

¹ "A summary of aerological observations made in well-pronounced highs and lows." By L. T. Samuels, MONTHLY WEATHER REVIEW, May, 1926.

METEOROLOGICAL SUMMARY FOR SOUTHERN SOUTH AMERICA, MARCH, 1928

By J. BUSTOS NAVARRETE

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A slightly increased activity characterized the atmospheric circulation during the month of March; however, the mean path of the depressions ran rather far to the south, between latitudes 40° and 45° S.

Important depressions were charted during the following periods: 2d to 5th, 7th to 10th, 13th to 15th, and 28th to 30th. Precipitation accompanying the second of these storms extended northward to the coast of Arauco, while that caused by the others reached Concepcion. The greatest amount of rainfall for the month was 10.04 inches at Valdivia, where 4.72 inches fell on the 3d.

Between the 11th and the 13th an anticyclone moved from Chiloe toward Argentina; later, from the 19th to the 26th, a second important high-pressure area remained centered in the region of Chiloe and brought a long period of settled weather.

METEOROLOGICAL SUMMARY FOR BRAZIL, MARCH, 1928

By FRANCISCO DE SOUZA, Acting Director

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The circulation in the lower strata of the atmosphere was not so active as in the preceding month; however, considerable activity was manifested by the continental depression and the depressions in high latitudes. Six anticyclones, all of small importance, invaded the country from the south; the accompanying fall in temperature, which was considerable in the southern part of the continent, extended to the extreme southern part of Brazil.

In the northern and central regions of the country precipitation was below normal, the deficiencies being 2.60 and 3.11 inches, respectively. In the southern region, on the contrary, there was an abundance of rain, with a mean excess of 1.81 inches.

The weather was generally hot. The abundant rains in the south were generally favorable to crops. In Bahia and the northeast rains were infrequent, especially in the second decade, and this was detrimental to the cane crop and disadvantageous to the planting of cotton, cereals, and vegetables. The gathering of crops of cotton and cereals was completed in the southern, central, and Amazonian regions, and the harvesting of cane was begun in the latter area. The yields were good.

In Rio de Janeiro and vicinity the weather was variable, alternating from fine to unsettled, with general rains on some days. Cloudy days numbered 22 and clear days 9. Temperatures were high; the values for mean daily and mean maximum temperature were 3.6° and 1.4° F. above the respective normals. The extreme readings were 94° on the 1st and 67° on the 31st. In the suburban sections the temperature had still greater range; at Gavea the highest temperature was 102° on the 9th and the lowest was 63° on the 30th. The total precipitation for the month was 6.31 inches, distributed over 17 days. Southerly winds prevailed; at times these were rather cool.—*Transl. by W. W. Reed.*